Rotation Is Important In Managing Diplodia Ear Rot Of Corn

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Diplodia ear rot was unusually widespread and severe on corn throughout most of Missouri during the 2009 season. It developed again during the 2010 season in much of the state although perhaps not as severe as in 2009. Since the primary source of inoculum for the disease is diseased corn debris left in the field and since corn debris may remain in a field for several years, planting corn in a field which had high levels of Diplodia ear rot in 2009 or 2010 increases the risk of the disease occurring in 2011 corn. The risk for Diplodia ear rot will also be greatly influenced by weather conditions after silking with the risk being the greatest if wet weather occurs after silking. The following article covers symptoms, factors favoring disease development and management options for Diplodia ear rot of corn.

Diplodia ear rot may be evident as bleaching or light straw coloration of the ear leaf and husks on plants.

Diplodia ear rot is caused by the fungus *Stenocarpella maydis* formerly known as Diplodia maydis. When infection occurs just after silking, the ear leaf and husks on the ear may appear prematurely bleached or strawcolored. The bleached ear leaf and husks stand out in a very striking pattern against the green foliage of the rest of the plant. When the husk is peeled back, dense white to grayish-white mold growth will be matted between the kernels and between the ear and the husks. In fact, husks may be difficult to peel back on ears with severe infections of Diplodia ear rot. Small, black fungal fruiting bodies may be scattered on husks or embedded in cob tissues and kernels. The entire ear may be grayish-brown, shrunken, very lightweight and completely rotted.

Diplodia stalk rot

Stenocarpella maydis (Diplodia maydis) can also cause a stalk rot of corn. With the stalk rot, affected plants may wilt, the foliage may appear off-color or gray- green in color, the lower leaves may become bleached in color and the internal pith tissues of the stalk deteriorate and disintegrate. Small, black fungal fruiting bodies similar to those formed on ears and cobs may also be found in stalk tissues.

The primary source of inoculum is diseased corn debris left in the field. The small, black fungal fruiting bodies embedded in stalk, cob and kernels contain spores of the fungus. These spores can be released the following season to cause infection of the current season's corn crop. Wet weather favors spore release and spread. During wet weather the following season, the fungal fruiting bodies produce spores which may be spread to silks on current season corn plants by splashing rain. The fungus then grows down the silks into the ears. The fungus may also enter the husk by growing between the ear shoot and the sheath of the ear leaf. In this case infection may be heaviest at the base of the ear. Insect damage and bird damage may also predispose corn plants to infection. Ears tend to be most susceptible to infection for three weeks after silking when silks are senescing. Diplodia ear rot is favored by wet weather just after silking and is more severe when corn is planted following corn.

Four ears with ranging symptoms of Diplodia ear rot of corn.

Crop rotation is extremely important in attempting to reduce the risk of Diplodia ear rot. Because of the high level of fungal fruiting bodies which may remain in infested corn debris left in the field, the disease may be much more severe if corn follows corn which had Diplodia ear rot.

Hybrids do vary in their susceptibility to Diplodia ear rot and stalk rot. Although published ratings for Diplodia ear rot may be difficult to find, most companies should have a good idea of susceptible and more resistant hybrids. Visit with your seed dealer about the reaction of their hybrids to Diplodia ear rot, especially if it is necessary to plant corn on corn in 2011. Δ

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